

# Draft LRIT Costing and Billing Standard

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# DRAFT LRIT COSTING AND BILLING STANDARD

## 1 General Provisions

### 1.1 Scope and Background

#### 1.1.1 Scope

- 1.1.1.1 The intent of this document is to provide a draft standard for costing and billing in the International Long-Range Identification and Tracking (LRIT) system.
- 1.1.1.2 This document has been prepared by the Ad Hoc Working Group on Engineering Aspects of Long-Range Identification and Tracking of Ships.
- 1.1.1.3 In preparing the document, the Ad Hoc Working Group has taken into account the provisions of SOLAS regulation V/19-1 and resolution MSC.210(81), "Performance Standards and Functional Requirements for the Long Range Identification and Tracking of Ships."

#### 1.1.2 Background

- 1.1.2.1 The Maritime Safety Committee, at its eighty-first session in May 2006, adopted amendments to chapter V of the SOLAS convention in relation of LRIT. These amendments will enter into force on 1 January 2008 provided that acceptance criteria have been fulfilled by 1 July 2007.
- 1.1.2.2 The LRIT system provides for the global identification and tracking of ships.
- 1.1.2.3 In operating the LRIT system, recognition shall be given to international conventions, agreements, rules or standards that provide for the protection of navigational information.
- 1.1.2.4 The draft Costing and Billing standard for the international LRIT system as outlined in this document will be established and recognised by the Committee.

## 1.2 General Description of the System and Definitions

### 1.2.1 LRIT System Description

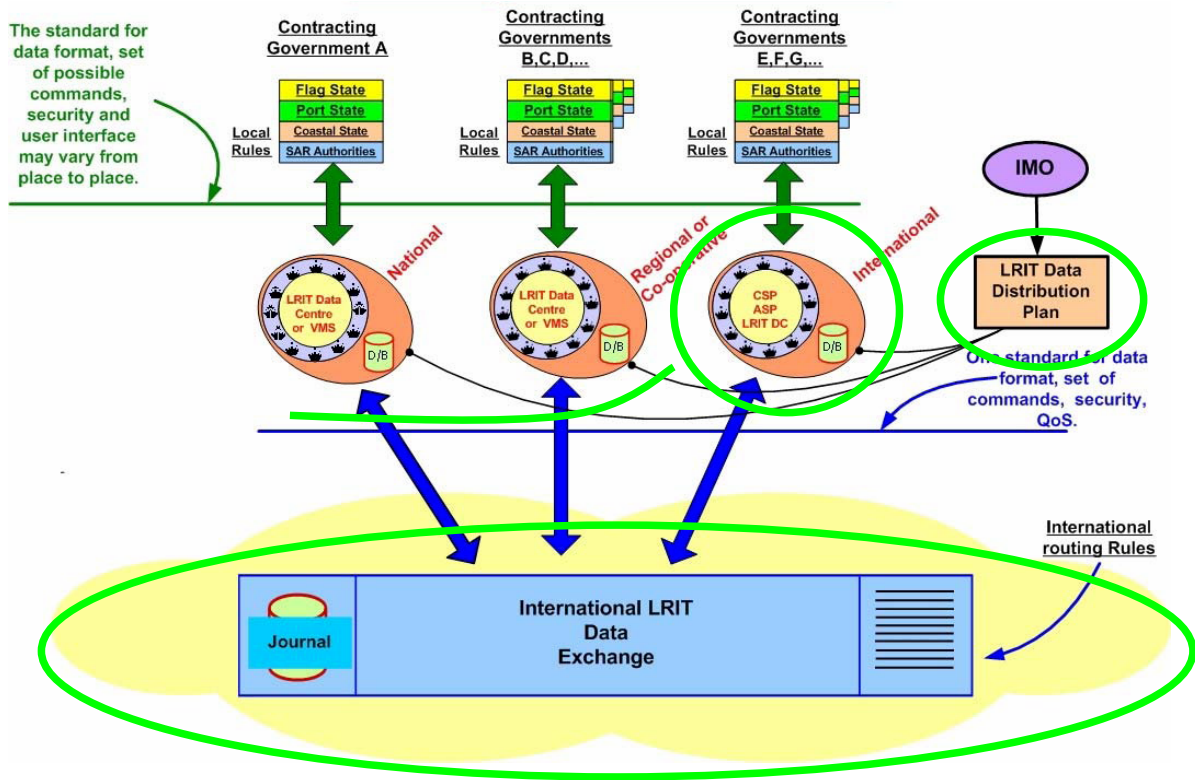
- 1.2.1.1 As described in resolution MSC.210(81), sub-section 1.2, the LRIT system consists of the following components:
  - .1 the shipborne LRIT information transmitting equipment;
  - .2 the Communication Service Provider(s);
  - .3 the Application Service Provider(s);
  - .4 the LRIT Data Centre(s), including any related Vessel Monitoring System(s);
  - .5 the LRIT Data Distribution Plan;
  - .6 the International LRIT Data Exchange; and
  - .7 LRIT Data Users.
- 1.2.1.2 As described in resolution MSC.210(81), sub-section 1.2, certain aspects of the performance of the LRIT system are reviewed or audited by an LRIT Co-ordinator acting on behalf of all Contracting Governments.

### 1.2.2 LRIT System Operation

- 1.2.2.1 Subsections 1.2.2.1 to 1.2.2.11 provide a high-level overview of the LRIT system architecture. The LRIT system performance standards, resolution MSC.210(81), provide further details on the functions associated with each component of the system.

- 1.2.2.2 Tracking of any applicable ship begins with LRIT positional data being transmitted from the shipborne equipment. The LRIT information transmitted includes the ship's GNSS position (based on the WGS 84 datum), time and identification, as described in resolution MSC.210(81), Table 1.
- 1.2.2.3 The Communication Service Provider (CSP) provides the communication infrastructure and services that are necessary for establishing a communication path between the ship and the Application Service Provider (ASP). The LRIT information transmitted from the ship will travel across the communication path set up by the CSP to the ASP.
- 1.2.2.4 The ASP, after receiving the LRIT information from the ship, will add additional information to the LRIT message and pass along the expanded message to its associated LRIT Data Centre. Functionality required for the programming and communicating of commands to the shipborne equipment is provided by the ASP.
- 1.2.2.5 The LRIT data, along with all the parameters added by the various LRIT components, is described in the messaging section of the "Draft Technical Specifications for Communication within the LRIT System."
- 1.2.2.6 LRIT Data Centres will store all incoming LRIT information from ships instructed by their Administrations to transmit LRIT information to that Data Centre. LRIT Data Centres will disseminate LRIT information to LRIT Data Users according to the Data Distribution Plan (DDP).
- 1.2.2.7 The LRIT Data Distribution Plan will contain the information required by the Data Centres for determining how LRIT information will be distributed to the various Contracting Governments. The DDP will contain information such as standing orders from Contracting Governments and geographical polygons relating to Contracting Governments' coastal waters and ports and port facilities.
- 1.2.2.8 The Data Centres will process all LRIT messages to and from the International LRIT Data Exchange (IDE). The IDE will process all LRIT messages between LRIT Data Centres. The IDE will route the message to the appropriate Data Centre based upon the information contained within the DDP. The IDE will neither process nor store the positional data contained within LRIT messages.
- 1.2.2.9 LRIT Data Users may be entitled to receive or request LRIT information in their capacity as a flag State, port State, coastal State or Search and Rescue (SAR) service.
- 1.2.2.10 The LRIT Co-ordinator assists in the establishment of the international components of the LRIT system, performs administrative functions, and reviews and audits certain components of the LRIT system.
- 1.2.2.11 Figure 1 provides a high-level illustration of the basic LRIT system architecture.

**FIGURE 1**  
**TYPICAL LRIT SYSTEM ARCHITECTURE**



### 1.2.3 Definitions

#### 1.2.3.1 Unless expressly provided otherwise:

- .1 *Convention* means the International Convention for the Safety of Life at Sea, 1974, as amended.
- .2 *Regulation* means a regulation of the Convention.
- .3 *Chapter* means a chapter of the Convention.
- .4 *LRIT Data User* means a Contracting Government or a Search and rescue service that opts to receive the LRIT information it is entitled to.
- .5 *Committee* means the Maritime Safety Committee.
- .6 *High-speed craft* means a craft as defined in regulation X/1.3.
- .7 *Mobile offshore drilling unit* means a mobile offshore drilling unit as defined in regulation XI-2/1.1.5.
- .8 *Organization* means the International Maritime Organization.
- .9 *Vessel Monitoring System* means a system established by a Contracting Government or a group of Contracting Governments to monitor the movements of the ships entitled to fly its or their flag. A Vessel Monitoring System may also collect from the ships information specified by the Contracting Government(s) that has established it.
- .10 *LRIT information* means the information specified in SOLAS regulation V/19-1.5.

- .11 *IDC operator* means the individual responsible for the daily operation and maintenance of the International LRIT Data Centre.
- 1.2.3.2 The term “*ship*,” when used in the present Performance standards and functional requirements for long-range identification and tracking of ships, includes mobile offshore drilling units and high-speed craft as specified in SOLAS regulation V/19-1.4.1 and means a ship that is required to transmit LRIT information.
- 1.2.3.3 Terms not otherwise defined should have the same meaning as the meaning attributed to them in the Convention.

## **1.2.4 Acronyms Used Within This Document**

- 1.2.4.1 The acronyms that appear within this document shall have the meanings assigned to them in this Article:
  - .1 ASP Application Service Provider
  - .2 CSP Communication Service Provider
  - .3 DC LRIT Data Centre
  - .4 DDP LRIT Data Distribution Plan
  - .5 IDC International LRIT Data Centre
  - .6 IDE International LRIT Data Exchange
  - .7 LES Land Earth Station
  - .8 MMSI Maritime Mobile Service Identity
  - .9 RFP Request for Proposal
  - .10 SAR Search and Rescue
  - .11 SAR SURPIC Search and Rescue Surface Picture
  - .12 SOLAS International Convention for the Safety of Life at Sea
  - .13 SSL Secure Sockets Layer
  - .14 VPN Virtual Private Network
  - .15 VMS Vessel Monitoring System

## **2 Standard for Costing and Billing**

### **2.1 General**

#### **2.1.1 Framework**

- 2.1.1.1 An accepted standard for costing and billing within the International LRIT system is critical to ensuring a successful system.
- 2.1.1.2 Within the LRIT Costing and Billing standard, both capital and operating costs shall be considered, as shall costs for developing, implementing and operating the IDE and the IDC; for the LRIT Coordinator; and for the DDP.
- 2.1.1.3 This document describes the overall costing and billing framework that must be followed to help ensure the successful implementation of the International LRIT system and the long-term sustainability of that system.

#### **2.1.2 Considerations**

- 2.1.2.1 The overall cost of the International LRIT system will be closely linked to the volume of data, i.e. the number of individual communications, estimates of which are unknown at this time.
- 2.1.2.2 An indication from Contracting Governments with respect to their commitment to receive the minimum number of 4 position reports per day from their ships and to indicate whether they believe that they will be able to estimate an approximate volume

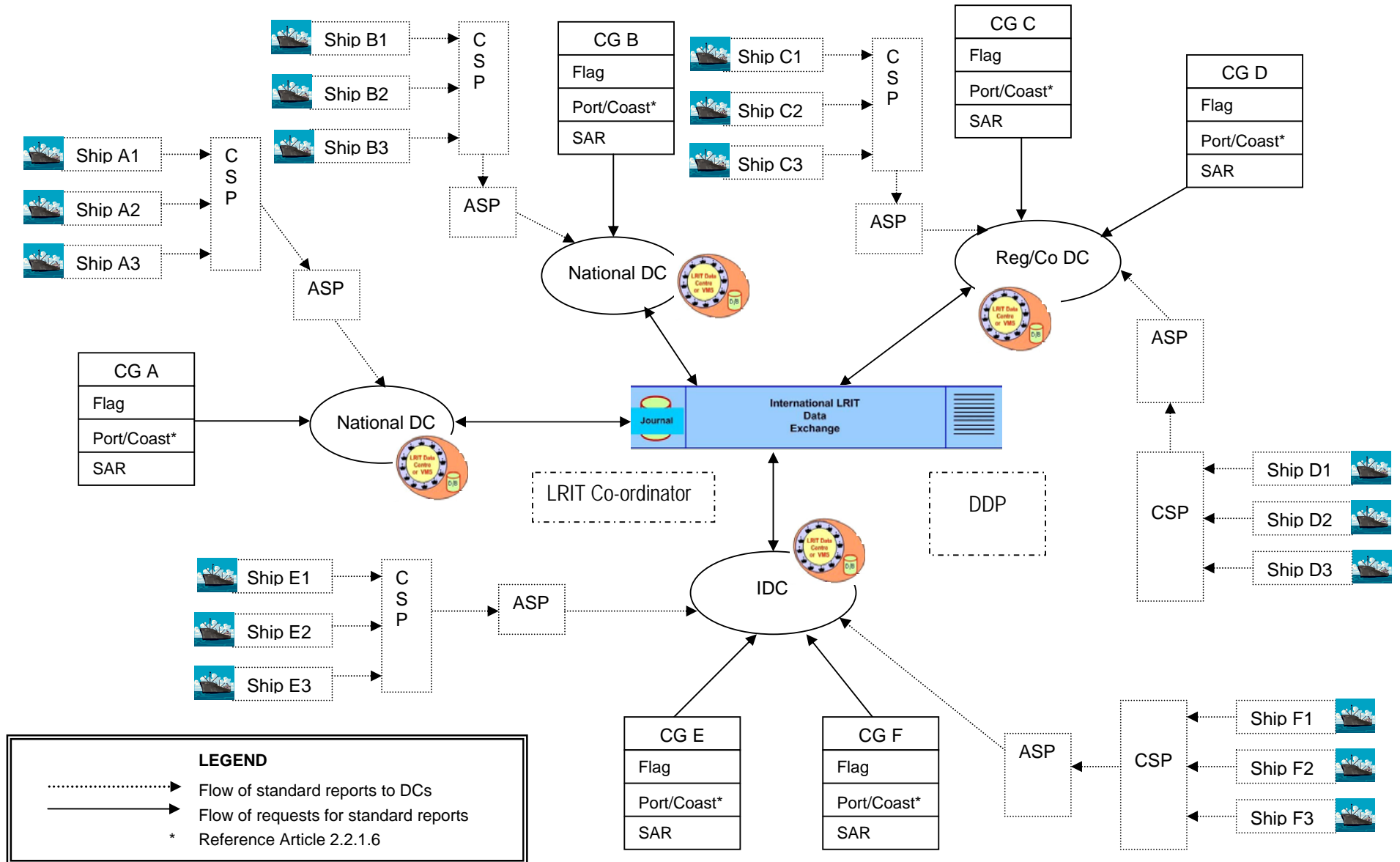
of reports that they are likely to request in a particular period would be valuable input into the work of the *Ad hoc Working Group*.

## **2.2 Flow of Reports and Requests within the International LRIT System**

### **2.2.1 Overview**

- 2.2.1.1 Costing and billing scenarios within the International LRIT system are based upon the flow of requests and reports within the system.
- 2.2.1.2 Two different types of data must be considered within the International LRIT System for the purposes of developing a costing and billing standard:
  - .1 The 4 standard position reports per day per ship and,
  - .2 The poll position, or a change to the regular position report.
- 2.2.1.3 Given that a distinction must be made between the standard 4x a day position reports, and responses to polling requests,
  - .1 Subsection 2.2.2 examines various scenarios and related costing and billing for the standard 4x a day position reports
  - .2 Subsection 2.5 examines costing and billing issues related to requests for additional polled data.
- 2.2.1.4 Contracting Governments are entitled to receive data from the International LRIT System as a:
  - .1 Flag state,
  - .2 Port state,
  - .3 Coastal state, and
  - .4 Search and Rescue
- 2.2.1.5 For the purposes of a costing and billing standard, Port State and Coastal State requests for ship data can be grouped together, because while the coastal trigger is the coastal state polygon (within the DDP) and the port state trigger is the Notice of Arrival (NOA), once the request is triggered the two scenarios are identical with respect to the flow of requests and responses that lead to the determination of costs and the related flow of billing and payments.
- 2.2.1.6 Further to 2.2.1.5, for the purposes of a costing and billing standard there are therefore three distinct LRIT Data Users:
  - .1 Flag state,
  - .2 Port/Coastal state, and
  - .3 Search and Rescue
- 2.2.1.7 All three distinct LRIT Data User Groups identified in may use one of:
  - .1 a national DC,
  - .2 a regional/cooperative DC, or
  - .3 the IDC.
- 2.2.1.8 The flow of reports and requests within the International LRIT System is illustrated in Figure 2.

**FIGURE 2**  
**FLOW OF REPORTS AND REQUESTS WITHIN THE INTERNATIONAL LRIT SYSTEM**





## 2.2.2 Costing and Billing Scenarios for standard 4x reports/day

- 2.2.2.1 Given 2.2.1.6 and 2.2.1.7, there are thus 10 distinct request/response scenarios—and therefore 10 distinct related costing/billing scenarios—that could occur within the International LRIT system:
- .1 Flag State reporting to a National DC requesting its own ship positional data,
  - .2 Flag State reporting to a Regional/Co-operative DC requesting its own ship positional data,
  - .3 Flag State reporting to the IDC requesting its own ship positional data,
  - .4 Flag State reporting to the IDC *not* requesting its own ship positional data,
  - .5 Port State/Coastal State request from requestor using a regional/co-operative DC and requesting ship positional data from a vessel associated with the same DC,
  - .6 Port State/Coastal State request from requestor using a regional/co-operative DC and requesting ship positional data from a vessel associated with a national DC,
  - .7 Port State/Coastal State request from requestor using a regional/co-operative DC and requesting ship positional data from a vessel associated with the IDC
  - .8 Port State/Coastal State request from requestor using the IDC and requesting ship positional data from a vessel associated with a National or Regional/Co-operative DC
  - .9 Port State/Coastal State request from requestor using the IDC and requesting ship positional data from a vessel associated with the IDC
  - .10 Port State/Coastal State – National/Regional DC
- 2.2.2.2 For Contracting Governments reporting to either a National or Regional/Co-operative DC, Article 2.2.2.1 assumes that:
- .1 National and Regional Co-operative DCs would be established as Vessel Monitoring Systems,
  - .2 if a Contracting Government establishes a National or Regional/Co-operative DC, that Contracting Government wants the LRIT data for all of its ships and would thus be requesting, receiving and paying for the minimum 4x/day reports for all vessels reporting to its flag, and,
  - .3 those Contracting Governments not wanting to receive or pay for their flag vessel data would select the option of using the IDC.
- 2.2.2.3 The assumptions made in 2.2.2.2 above are a suggested policy direction based on an interpretation of the Performance Standard that provides an option for Contracting Governments not to pay for unrequested flag data, while at the same time giving consideration to the long-term viability and sustainability of the International LRIT Data System.
- 2.2.2.4 If policy direction is determined not to support the assumption in 2.2.2.2, then two additional scenarios must be added to 2.2.2.1:
- .1 Flag State reporting to a National DC *not* requesting its own ship positional data, and
  - .2 Flag State reporting to a Regional/Co-operative DC *not* requesting its own ship positional data.
- 2.2.2.5 If policy direction is determined not to support the assumption in 2.2.2.2, then Contracting Governments wishing to establish their own National or Regional/Co-operative DCs would have the option of not requesting—and hence not paying—for

some or all of the standard position reports from their flag vessels, meaning those DCs would face the same issues as the IDC, some of which are:

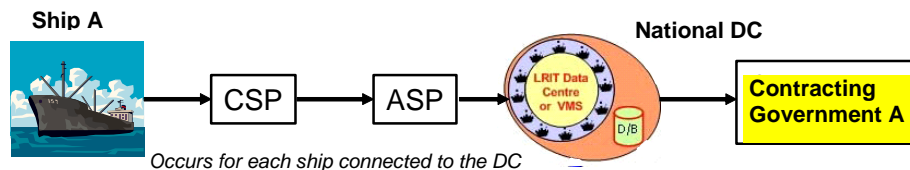
- .1 Who pays the CSP and ASP for the costs associated with each ship transmitting 4x a day?
- .2 If requesters, then:
  - 2.2.2.5.2.1. who pays for start-up and other costs (and therefore assumes risk) prior to any requests being made?
  - 2.2.2.5.2.2. does the first request trigger a single bill for all costs associated with the DC to date?
  - 2.2.2.5.2.3. how are start-up, operational and other costs apportioned?
  - 2.2.2.5.2.4. can requesters determine costs in advance in order to determine whether to pay?
- 2.2.2.6 Two suggested policy decisions are required related to costing and billing scenarios
  - .1 The Contracting Government(s) associated with specific ship positional data shall be entitled to recover its costs by means of billing DCs requesting that data, and
  - .2 If a Contracting Government or Governments uses a third-party commercial entity as its DC, then the DC associated with the data shall be entitled to make a reasonable profit by means of billing DCs requesting that data, and

**2.2.3 Scenario 1 – Flag State – National DC**

- 2.2.3.1 Scenario 1 is a Flag State reporting to a National DC requesting its own ship positional data.
- 2.2.3.2 Given the assumption made in 2.2.2.2, in Scenario 1, the Contracting Government acting as a Flag State is responsible to pay for all costs associated with the flow of the 4x position reports from each vessel entitled to fly its flag to its National Data Centre.
- 2.2.3.3 The billing scenario would be as outlined below and illustrated in Figure 3:
  - .1 The ship pays no money, and receives no bill,
  - .2 The CSP bills the ASP (if a separate entity),
  - .3 The ASP bills the DC, and
  - .4 The DC (if a separate entity), bills the Contracting Government.

**FIGURE 3**

**BILLING SCENARIO 1 – FLOW OF BILLS**



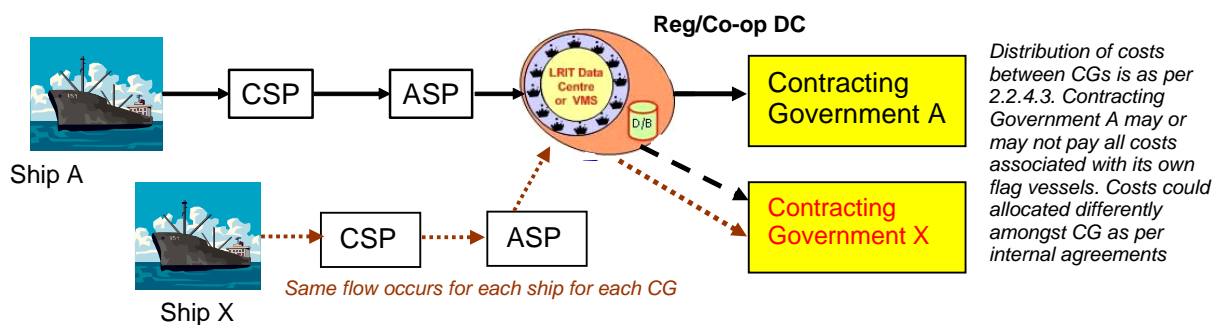
- 2.2.3.4 As per 2.2.2.6, the Contracting Government /DC may bill other DCs that request the data.
- 2.2.3.5 Those contractual agreements likely to be in place in Scenario 1 would be between the Contracting Government, its National DC, and the ASP and CSP.
- 2.2.3.6 The national DC would be the entity having a contract with an ASP, and paying for (at least) the minimum of four messages a day called for in the Performance Specifications.

- 2.2.3.7 If the National DC was not the Administration, then there would be an agreement between the Administration and the National DC whereby the Administration would pay the DC.
- 2.2.3.8 The Performance Standard, Resolution MSC.210(81), does not allow an Administration to go directly to a CSP, unless the CSP is acting as an ASP.
- 2.2.3.9 CSPs, ASPs and any other commercial entity involved in this scenario should reasonably be expected to make a reasonable profit.
- 2.2.3.10 This standard does not preclude the Contracting Government, as the proprietor of the data related to their flag vessels, from recovering costs from requestors of ship positional data.
- 2.2.3.11 This type of contractual arrangement is not within the scope of the costing/billing standard

**2.2.4 Scenario 2 – Flag State – Regional DC**

- 2.2.4.1 Scenario 2 is a Flag State reporting to a Regional/Co-operative DC requesting its own ship positional data.
- 2.2.4.2 Given the assumption made in 2.2.2.2, in Scenario 2, Contracting Governments acting as a Flag State are responsible for paying all costs associated with the flow of the 4x position reports from each vessel entitled to fly their flag to the Regional/Co-operative Data Centre.
- 2.2.4.3 The responsibility of each Contracting Government acting as a Flag State to pay a portion of all costs of the Application Service Provider (ASP) would be determined in a multi-level agreement amongst participating Contracting Governments.
- 2.2.4.4 The billing scenario would be as follows and as illustrated in Figure 4:
  - .1 The ship pays no money, and receives no bill,
  - .2 The CSP bills the ASP (if a separate entity),
  - .3 The ASP bills the DC, and
  - .4 The DC (if a separate entity), bills the Contracting Governments.

**FIGURE 4  
BILLING SCENARIO 2 – FLOW OF BILLS**



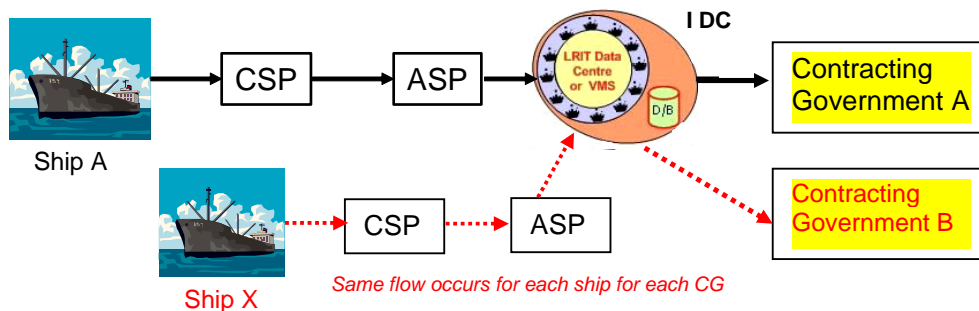
- 2.2.4.5 Those contractual agreements likely to be in place would be between the various Contracting Governments, the Regional/Cooperative DC, and the ASP and Communications Service Providers (CSP).
- 2.2.4.6 The Regional/Cooperative DC would be the entity having a contract with an ASP, and paying for (at least) the minimum of four messages a day called for in the Performance Specifications.

- 2.2.4.7 If the Regional/Cooperative DC was not the Administration, then there would be an agreement between the Administration and the Regional/ Cooperative DC whereby the Administration would pay the DC.
- 2.2.4.8 The Performance Standard, Resolution MSC.210(81), does not allow an Administration to go directly to a CSP, unless the CSP is acting as an ASP.
- .1 CSPs, ASPs and any other commercial entity involved in this scenario should reasonably expect to make a reasonable profit.
  - .2 This standard does not preclude each Contracting Government, as the proprietor of the data related to their flag vessels, from recovering costs from requestors of ship positional data.
  - .3 This type of contractual arrangement is not within the scope of the costing/billing standard.
  - .4 However, whether or not this arrangement should be outside the system will have potential cost ramifications to the other users of the system and should be further explored by the Ad hoc Working Group. In that regard, if all transactions among users of a Regional or Co-operative DC are outside the scope of the LRIT system, the various overhead charges that are identified in this document will necessarily not be shared by those who use a regional or co-operative system and will have to be paid by others that use the system.

**2.2.5 Scenario 3 – Flag State – IDC**

- 2.2.5.1 Scenario 3 is a Flag State reporting to the IDC and requesting the minimum four position reports a day.
- 2.2.5.2 As in Scenarios 2 and 3, Contracting Governments acting as a Flag State would be requesting and paying all costs associated with the flow of the 4x position reports from each vessel entitled to fly their flag to the IDC.
- 2.2.5.3 The billing scenario would be as follows and as illustrated in Figure 5:
- .1 The ship pays no money, and receives no bill,
  - .2 The CSP bills the ASP (if a separate entity),
  - .3 The ASP bills the IDC, and
  - .4 The IDC bills the Contracting Government.

**FIGURE 5  
BILLING SCENARIO 3 – FLOW OF BILLS**

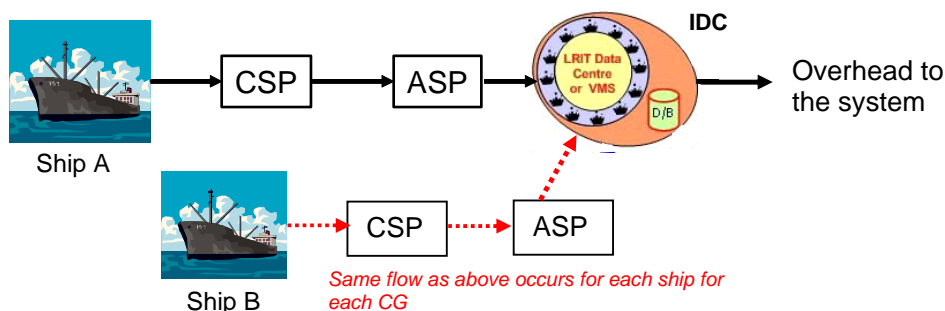


**2.2.6 Scenario 4 – Flag State Does Not Want Data**

- 2.2.6.1 Scenario 4 is a Flag State Reporting to the IDC that is *not* requesting all or some of the minimum four position reports a day

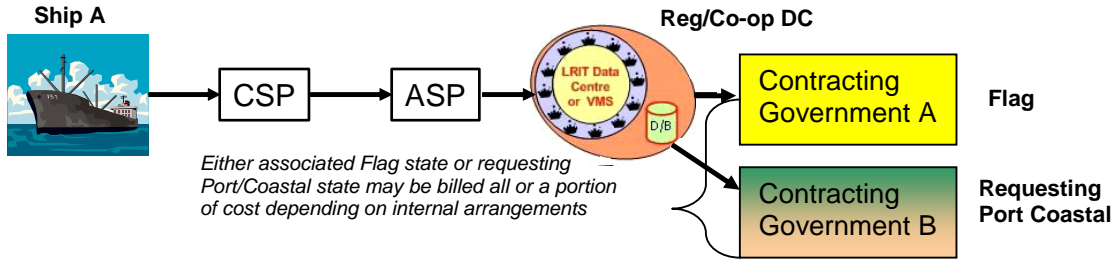
- 2.2.6.2 Unlike Scenario 4, the Contracting Government would not be requesting —and would therefore not be responsible for the costs associated with —some or all of the 4x position reports from each vessel entitled to fly its to the IDC.
- 2.2.6.3 The billing scenario would be as follows and as illustrated in Figure 6:
- .1 The ship pays no money, and receives no bill,
  - .2 The CSP bills the ASP (if a separate entity),
  - .3 The ASP bills the IDC,
  - .4 The IDC bills the Contracting Government for those reports it has requested and received, and
  - .5 Costs associated with the unrequested positional reports become part of the overhead of the International LRIT system as outlined in Section 2.3.

**FIGURE 6**  
**BILLING SCENARIO 4 – FLOW OF BILLS**



- 2.2.6.4 This type of contractual arrangement is within the scope of the costing/billing standard.
- 2.2.7 Scenario 5 – Port State with same Regional DC**
- 2.2.7.1 In Scenario 5, a port state is reporting to a Regional/Co-operative DC and requesting ship positional data from a ship associated with the same Regional/Co-operative DC
- 2.2.7.2 The billing scenario for the flow of data from the ship to its associated DC would be as described in Scenario 2 and as illustrated in Figure 7:
- .1 The ship pays no money, and receives no bill,
  - .2 The CSP bills the ASP (if a separate entity),
  - .3 The ASP bills the DC, and
  - .4 The DC (if a separate entity), bills the Contracting Government(s) based on internal arrangements between all Contracting Governments associated with that DC.
- 2.2.7.3 As in Scenario 2, this is an internal matter between Administrations using the Regional DC
- 2.2.7.4 This type of contractual arrangement is therefore not within the scope of the costing/billing standard.

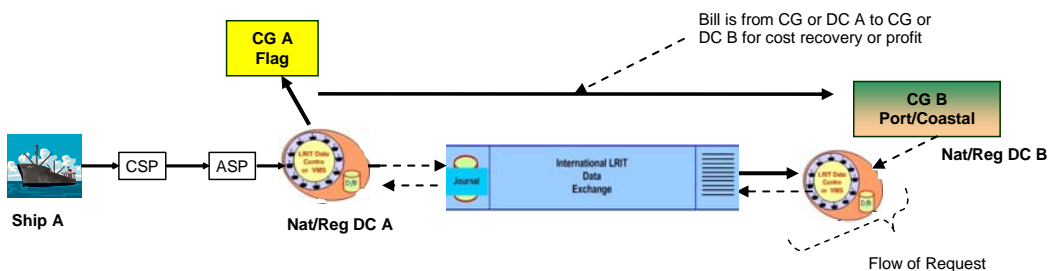
**FIGURE 7**  
**BILLING SCENARIO 5 – FLOW OF BILLS**



**2.2.8 Scenario 6 – Port State National/Regional DC to National/Regional DC**

- 2.2.8.1 Scenario 6 is a Port or Coastal state request from an Administration belonging to one National or Regional/co-operative DC via the IDE to a second National or Regional DC, with which the vessel is associated.
- 2.2.8.2 Both the IDE and the DDP are required and must be considered as part of the overhead cost as described in Section 2.3.
- 2.2.8.3 The ASP has been paid by the flag for the transmission of reports from the ship to the DC, with the report now residing in the DC.
- 2.2.8.4 The requestor of the data would be the entity responsible for paying both the direct and indirect (overhead costs) of that data.
- 2.2.8.5 This scenario raises the policy questions outlined in Article 2.3.1.1, namely:
  - .1 No charge for the cost of the position report except the overhead cost of the IDE (implies that the regular position reports are being paid for by the flag and provided free of charge to requesters, therefore no cost sharing);
  - .2 The cost could be shared (allowing for cost recovery); or
  - .3 The source DC could make a profit instead of cost sharing
- 2.2.8.6 The billing scenario for the flow of data from the ship to its associated DC would be as described in Scenario 2, with the potential full billing scenario as illustrated in Figure 8:

**FIGURE 8**  
**BILLING SCENARIO 6 – FLOW OF BILLS**

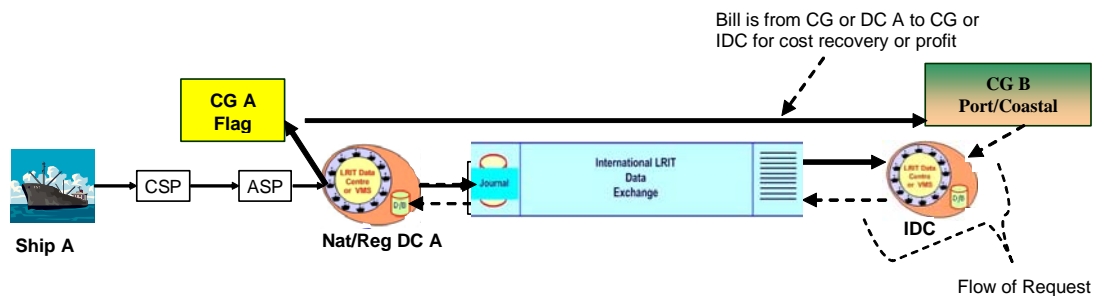


**2.2.9 Scenario 7 – Port State National/Regional DC to IDC**

- 2.2.9.1 Scenario 7 is a Port or Coastal state request from an Administration belonging to the IDC via the IDE to the National or Regional/Co-operative DC with which the vessel is associated.

- 2.2.9.2 The IDC, IDE and the DDP are required and must be considered as part of the overhead cost as described in Section 2.3.
- 2.2.9.3 The ASP may (Scenario 3) or may not (Scenario 4) have been paid by the flag for the transmission of reports from the ship to the DC, with the report now residing in the DC.
- 2.2.9.4 The requestor of the data would be the entity responsible for paying both the direct and indirect (overhead costs) of that data.
- 2.2.9.5 As per Article 2.4.1.1, an equitable basis for cost distribution is recommended.
- 2.2.9.6 If the costing matrix is different based on whether or not the IDC was used, then the overhead cost in this Scenario would be different to that in Scenario 6.
- 2.2.9.7 If the costing matrix is the same regardless of whether or not the IDC was used, then the overhead cost in this Scenario would be the same as that in Scenario 6.
- 2.2.9.8 The three policy options outlined in Article 2.3.1.1 and the related issue of what type of costs might be shared must be considered.
- 2.2.9.9 The billing scenario for the flow of data from the ship to its associated DC would be as described in Scenario 1 or 2, with the potential full billing scenario as illustrated in Figure 9:

**FIGURE 9**  
**BILLING SCENARIO 7 – FLOW OF BILLS**

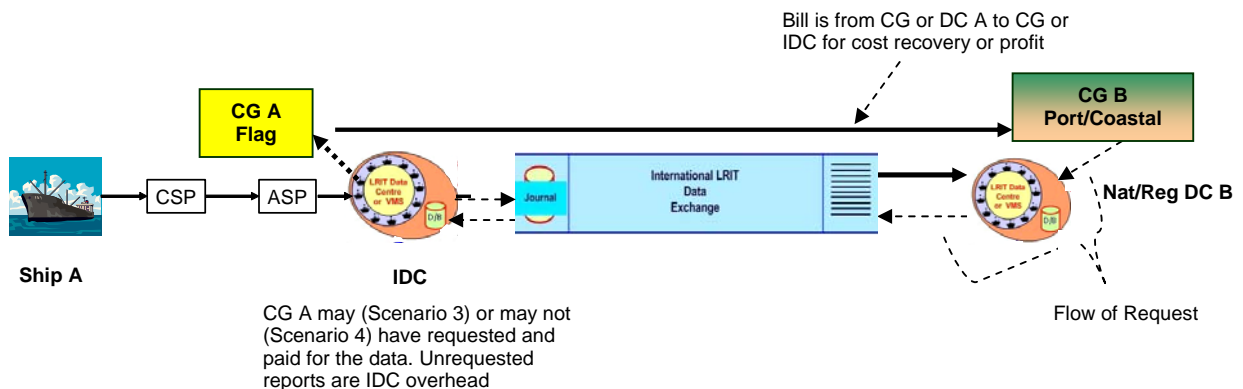


#### 2.2.10 Scenario 8 – Port State – IDC to National/Reg DC

- 2.2.10.1 Scenario 8 is a Port or Coastal state request from an Administration belonging to one National or Regional/co-operative DC via the IDE to the IDC, with which the vessel is associated.
- 2.2.10.2 The IDC, IDE and the DDP are required and must be considered as part of the overhead cost.
- 2.2.10.3 The ASP may (Scenario 3) or may not (Scenario 4) have been paid by the flag for the transmission of reports from the ship to the DC, with the report now residing in the DC.
- 2.2.10.4 The requestor of the data would be the entity responsible for paying both the direct and indirect (overhead costs) of that data.
- 2.2.10.5 As per Article 2.4.1.1, an equitable basis for cost distribution is recommended.
- 2.2.10.6 If the costing matrix is different based on whether or not the IDC was used, then the overhead cost in this Scenario would be different to that in Scenario 6.
- 2.2.10.7 The three policy options outlined in Article 2.3.1.1 and the related issue of what type of costs might be shared must be considered. As the IDC is involved, unlike Scenario 7, and assuming the flag itself has not requested the data, then the 4 position reports provided per day that have not been requested and therefore not paid for become part of the overhead cost.

- 2.2.10.8 If the costing matrix is the same regardless of whether or not the IDC was used, then the overhead cost in this Scenario would be the same as that in Scenario 6.
- 2.2.10.9 The billing scenario would be as illustrated in Figure 10.

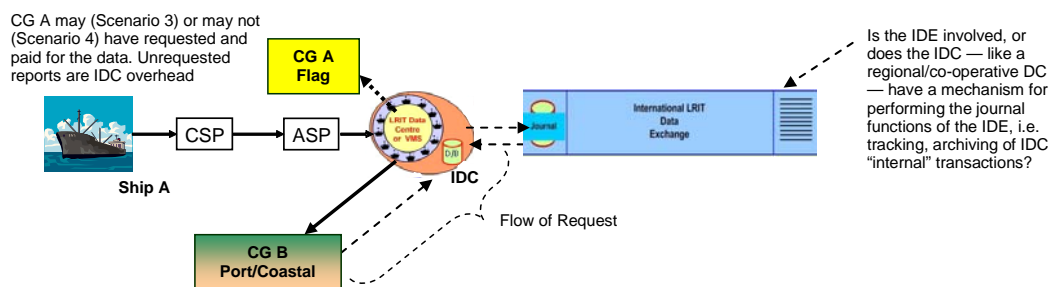
**FIGURE 10**  
**BILLING SCENARIO 8 – FLOW OF BILLS**



**2.2.11 Scenario 9 – IDC to IDC**

- 2.2.11.1 Scenario 9 is a Port or Coastal state request from an Administration belonging to the IDC for a ship that is also associated with the IDC
- 2.2.11.2 The IDC, IDE and DDP are required and must be considered as part of the overhead cost.
- 2.2.11.3 The ASP may (Scenario 3) or may not (Scenario 4) have been paid by the flag for the transmission of reports from the ship to the DC, with the report now residing in the DC.
- 2.2.11.4 The requestor of the data would be the entity responsible for paying both the direct and indirect (overhead costs) of that data.
- 2.2.11.5 If the costing matrix is different based on whether or not the IDC was used, then the overhead cost in this Scenario would be different to that in Scenario 6.
- 2.2.11.6 One option is to take all the overheads and spread them around all the various transactions in the systems. Overhead would be considered to be everything that goes through the IDE.
- 2.2.11.7 If the transaction does not involve the international components of the system, should the requestor still be expected to pay for them as overhead?
- 2.2.11.8 The billing scenario would be as illustrated in Figure 11.

**FIGURE 11**  
**BILLING SCENARIO 9 – FLOW OF BILLS**

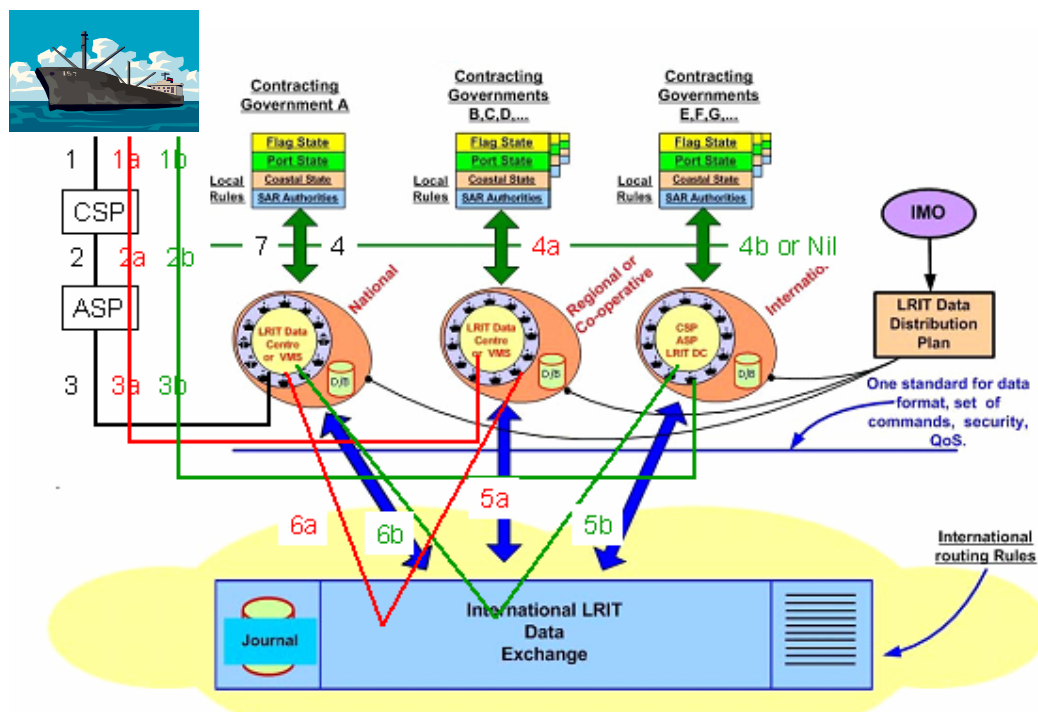




**2.2.12 Scenario 10 – SAR Request**

- 2.2.12.1 SAR requesters do not pay for positional data.
- 2.2.12.2 National DCs would assume costs for requests associated with ships reporting to that DC. If the national DC is a commercial entity, the associated Administration would be billed.
- 2.2.12.3 Regional/Co-operative DCs would assume costs for requests associated with ships reporting to that DC. If the DC is a commercial entity, the Administrations associated with that DC would have arrangements re cost distribution amongst participating Administrations.
- 2.2.12.4 For the green line, the data flows through the IDE, but this would not be a transaction that could be counted towards overhead. But the individual position report has been paid for by Contracting Government A, B, C.
- 2.2.12.5 SAR can ask for archived data without charge. Considerations of how to allocate this overhead cost are as raised in previous overhead discussions in this paper.
- 2.2.12.6 5b and 6b would go to the SAR authority free of charge. SAR doesn't pay for either the position itself, or for the overhead of the IDE. It should also be noted that SAR can ask for archived data without charge. Considerations of how to allocate this overhead cost are as raised in previous overhead discussions.

**FIGURE 12  
BILLING SCENARIO – FLOW OF BILLS**



**2.3 Data Between DCs**

- 2.3.1.1 Three options are possible for the costing/billing related to the sharing of the standard 4x daily position reports between DCs:
  - .1 No charge for the cost of the position report except the overhead cost of the IDE (implies that the regular position reports are being paid for by

the flag and provided free of charge to requesters, therefore no cost sharing);

- .2 The cost could be shared (allowing for cost recovery); or
- .3 The source DC could make a profit instead of cost sharing.

2.3.1.2 Further to Article 2.3.1.1, if a Data Centre is entitled to recover its costs, costs can be either:

- .1 Position report by report, i.e. if one report is requested by five DCs, then each DC pays 20% of the cost, or
- .2 A calculation based on the total volume over a time period:
  - 1. The time period can be x/hour/day/month/year.
  - 2. Total number of position reports out of the DC over the time period shares total cost
  - 3. Each position report at least goes to the Flag.

## 2.4 Overhead Costs

### 2.4.1 General

2.4.1.1 An equitable basis for cost distribution is recommended.

2.4.1.2 It is recommended that overhead costs be based on a percentage of volume of transaction.

### 2.4.2 LRIT Co-ordinator Cost and Billing

2.4.2.1 The cost of the LRIT Co-ordinator shall be billed as a common charge across all Data Centres.

2.4.2.2 The charge shall be fair and equitable, and shall take into account the level of effort for the LRIT Co-ordinator.

### 2.4.3 DDP Cost and Billing

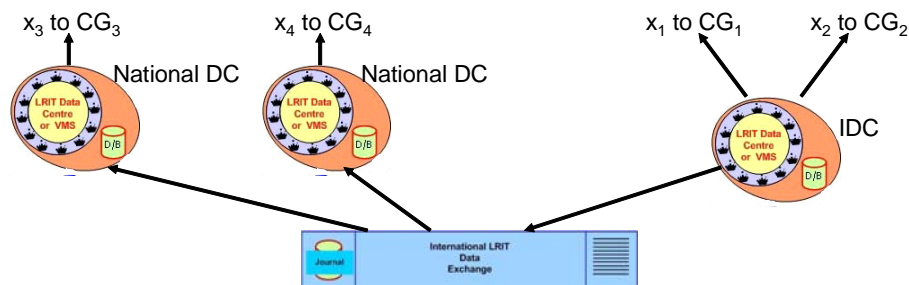
2.4.3.1

### 2.4.4 IDC Cost Allocation

2.4.4.1 The cost of the IDC, including all unrequested data, shall be an overhead charge based on the volume of data through the IDC.

2.4.4.2 The IDC charge shall be based on the volume of data from the IDC to a Contracting Government (IDC to IDE to DC to CG) as in Figure X, where  $x_1$  to  $x_4$  represent amounts of data *to* a Contracting Government *from* the IDC. Refer to Figure X.

FIGURE X

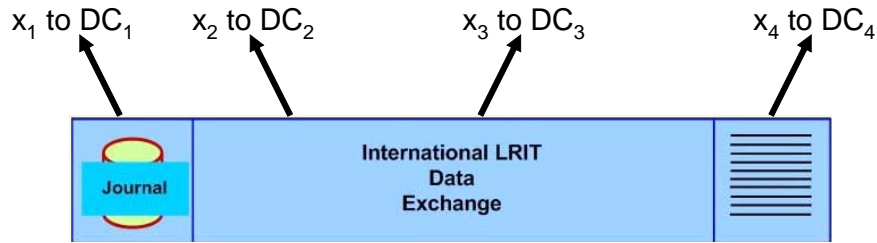


2.4.4.3 The resulting charge for  $CG_1 = x_1 / (x_1+x_2+x_3+x_4)*IDC$  Overhead

**2.4.5 IDE Charge/Allocation**

- 2.4.5.1 The cost of the IDE shall be an overhead charge based on the volume of data through the IDE.
- 2.4.5.2 The IDE charge shall be based on the volume of data to a DC divided by the total volume of data to all DCs, as in the following figure, where  $x_1$  to  $x_4$  represent amounts of data TO a DC. Refer to Figure X

**FIGURE X**



- 2.4.5.3 The resulting Charge for  $DC_1 = x_1 / (x_1 + x_2 + x_3 + x_4) * IDE \text{ Overhead}$

**2.5 Costing and Billing Framework related to additional polled requests**

**2.6 Centralized versus decentralized billing options/scenarios**

**2.7 Archiving of Data and associating costing/billing**

**2.8 Upfront Payments**

- 2.8.1.1 It is assumed that costs would be apportioned both as up-front charges and as pay-for-use payments. There are different billing implications for each. Technically somebody has to pay; it just comes down to whether that payment is in advance or in arrears.
- 2.8.1.2 There are no technical issues related to advance payments for overhead of the LRIT Co-ordinator.